



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,066	04/12/2005	Yuji Abe	064446-0014	2542

20277 7590 04/18/2006

MCDERMOTT WILL & EMERY LLP  
600 13TH STREET, N.W.  
WASHINGTON, DC 20005-3096

EXAMINER

ANDERSON, GUY G

ART UNIT PAPER NUMBER

2883

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

EK

**Office Action Summary**

Application No.

10/531,066

Applicant(s)

ABE ET AL.

Examiner

Guy G. Anderson

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 April 2005.  
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1-19 is/are rejected.  
 7) ☒ Claim(s) 1-11 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 02/14/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☒ All b) ☐ Some \* c) ☐ None of:  
 1. ☒ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 4/12/2005.

- 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_  
 5) ☐ Notice of Informal Patent Application (PTO-152)  
 6) ☐ Other: \_\_\_\_\_

***Claim Objections***

- 1.1 **Claims 1-11** are objected because of the following informalities:

**Regarding Claims 1-11**, the preamble of each claim indicates the claim is for a “method of producing an optical fiber.” However, the body of each claim is directed towards a device and/or method of cleaning an optical fiber.

Appropriate correction is required.

***Claim Rejections under 35 U.S.C. 102(b)***

- 2.1 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –*

*(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

- 2.2 **Claims 1-3, 9, 10, 12, 13, 16, 17** are rejected under 35 U.S.C. 102(b) as being anticipated by Furukawa Electric Co., Japan patent JP 10-029837.

- 2.3 **Regarding Claim 1**, Furukawa specifically discloses a method of cleaning optical fiber comprising:

- a) disposing a cleaning member on an optical fiber moving path (Fig. 1-5);
- b) bringing a surface of the moving optical fiber into a physical contact with the cleaning member for cleaning the surface of the moving optical fiber (Fig. 1-5).

**Regarding Claim 2:** Furukawa further teaches a method of cleaning optical fiber:

wherein the cleaning member is formed of a porous member (Fig. 2-5);

**Regarding Claim 3:** Furukawa further teaches a method of cleaning optical fiber:

wherein the cleaning member is formed of a mesh member (Fig. 2-5, Paragraph 27);

**Regarding Claim 9:** Furukawa further teaches a method of cleaning optical fiber:

wherein the optical fiber is passed through the cleaning member prior to detection of uneven spots on the optical fiber (Fig. 2, Paragraph 23);

**Regarding Claim 10:** Furukawa further teaches a method of cleaning optical fiber:

wherein the optical fiber is passed through the cleaning member prior to coloring of the optical fiber (Fig. 2, Paragraph 1);

**Regarding Claims 12,16:** Furukawa further teaches a method of cleaning optical fiber:

wherein a cleaning member is disposed on an optical fiber moving path so that the cleaning member brought into a physical contact with the surface of the moving optical fiber for cleaning the surface thereof (Fig. 1-5);

**Regarding Claims 13,17:** Furukawa further teaches a method of cleaning optical fiber:

Art Unit: 2883

wherein the cleaning member is held so that the contact portion of the cleaning member and the optical fiber is movable to a position of normally moving optical fiber by the movement of the optical fiber (Fig. 1-5);

***Further Rejections under 35 U.S.C. 102(b)***

3.1 **Claims 1-3, 12, 13, 16, 17** are rejected under 35 U.S.C. 102(b) as being anticipated by Schotter, US-5125980.

3.2 **Regarding Claims 1, 2, 3:** Schotter specifically discloses a method of cleaning optical fiber comprising:

- a) disposing a cleaning member on an optical fiber moving path (Fig. 4, 5, 6);
- b) bringing a surface of the moving optical fiber into a physical contact with the cleaning member for cleaning the surface of the moving optical fiber (Fig. 4, 5, 6);
- c) wherein the cleaning member is formed of a porous member (Col. 1, Lines 17-20), in that a sponge pad can be a porous member;
- d) wherein the cleaning member is formed of a mesh member (Col. 1, Lines 17-20), in that sponge pad or the like can encompass mesh type sponges or cleaning clothes.

**Regarding Claim 12, 16:** Schotter further teaches a method of cleaning optical fiber:

wherein a cleaning member is disposed on an optical fiber moving path so that the cleaning member brought into a physical contact with the surface of the moving optical fiber for cleaning the surface thereof (Fig. 4, 5, 6);

**Regarding Claim 13, 17:** Schotter further teaches a method of cleaning optical fiber:

wherein the cleaning member is held so that the contact portion of the cleaning member and the optical fiber is movable to a position of normally moving optical fiber by the movement of the optical fiber (Fig. 4, 5, 6).

***Claim Rejections under 35 U.S.C. 103(a)***

4.1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

4.2 **Claims 4-8, 11, 14-15, 18-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa Electric Co., Japan patent JP 10-029837.

Art Unit: 2883

**4.3 Regarding Claim 4:** Furukawa does not specifically disclose a cleaning device:

- a) wherein the mesh member is formed by knitting fiber threads and the optical fiber is inserted into an interstice of the fiber sheet (Fig. 2-5, Paragraph 27);

However, Furukawa specifically discloses a penetration hole for the fiber to be inserted into (Paragraph 18). Additionally, Furukawa discloses that a mesh object can be used to insert the fiber through (Paragraph 27) and further teaches that the mesh object should be of a material suited to the particular optical fiber being cleaned (Paragraph 27). Mesh material by definition consists of threads of material laced or knitted together and can also be the open space between the threads. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to insert an optical fiber through an interstice of the mesh material in order to remove dust and other particles adhering to the surface of the optical fiber prior to a coating or coloring process (Paragraph 11).

**Regarding Claim 5:** Furukawa does not specifically disclose:

- a) a fiber cleaning sheet with  $F=0.01$  (mm) and  $G=0.8*D$  where D denotes outer diameter of the optical fiber and G denotes the mesh size of the fiber thread and F denotes the diameter of the fiber thread.

However, Furukawa does specifically disclose that the mesh size can be varied depending upon needs and type of material used (Paragraph 27). Additionally, it would have been an obvious matter of design choice to vary the size of the mesh opening depending upon the size of the optical fiber to be cleaned. It has been held that when a modification would involve merely a change in the size of a component, then such a change in size is generally recognized as being within the level of ordinary skill in the art, In re Rose, 105 USPQ 237 (CCPA 1955);

**Regarding Claim 6:** Furukawa does not specifically disclose a cleaning device:

- a) wherein a plurality of fiber sheets are laminated in a moving direction of the optical fiber.

However, Furukawa does specifically disclose that a number of mesh sheets may be placed within the moving direction of the optical fiber (Fig. 4, 5, Paragraph 28, 29) and only omits the element of lamination. Since the combination of elements performs the same function with or without lamination, it would have been obvious to one of ordinary skill in the art at the time the invention was made to laminate the sheets, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art, In re Karlson, 136 USPQ 184.

**Regarding Claim 7:** Furukawa does not specifically teach:

- a) a relationship wherein the number of fiber sheets are preset to meet the relation

Art Unit: 2863

" $L = 54 * T - 3.4$ " in which L denotes the length of the optical fiber to be cleaned and T denotes the thickness of the fiber sheets.

However, Furukawa does disclose that the number of sheets can be chosen depending upon the application (See Paragraph 28) and therefore it would have been an obvious matter of design choice to vary the thickness of the fiber sheets depending upon the length of the optical fiber to be cleaned. It has been held that when a modification would involve merely a change in the size of a component, then such a change in size is generally recognized as being within the level of ordinary skill in the art, In re Rose , 105 USPQ 237 (CCPA 1955).

**Regarding Claim 8:** Furukawa does not specifically teach:

- a) the use of an electrically grounded cleaning member.

However, Furukawa does disclose that the problem to be solved and the reason for cleaning the optical fibers is that during the process of rolling and unrolling optical fiber from storage rolls, a build up of static electricity occurs which is the main causation of dust particles being attracted to and adhering on the optical fiber (Paragraphs 6-11). It is well known and understood in the art that providing electrical grounds for the cleaning members used in cleaning optical fibers and components is necessary in order to dissipate or bleed accumulated static charges to ground. (See Loder and Shoemaker, US-6854152 and Clatanoff and Cox, US-6863080.)

**Regarding Claim 11:** Furukawa does not specifically disclose:

- a) a method of cleaning the optical fiber wherein the fiber is cleaned, taken up on a storage reel, and then subjected to a coloring process.

However, Furukawa does specifically disclose performing the cleaning steps prior to application of any resin or coloring coatings (Fig. 1, Paragraph 13). Since performing the coating process after taking up the cleaned fiber onto a storage reel essentially amounts to a rearrangement of parts or steps in the process, it would have been obvious to one of ordinary skill in the art at the time the invention was made that storage of the fiber on a reel could be an intermediate step subsequent to the cleaning and prior to the coating process since it has been held that rearranging parts of an invention involves only routine skill in the art, In re Japikse, 86 USPQ 70.

**Regarding Claims 14, 18,** Furukawa does not specifically disclose a cleaning device:

- a) wherein the cleaning member is elongated due to friction between the cleaning member and the optical fiber so that the contact portion of the cleaning member and the optical fiber is movable in a moving direction of the optical fiber.

However, Furukawa does specifically disclose a cleaning member made of materials that have elastic properties (Paragraph 17). It would have been obvious to one of ordinary skill in that art at the time

Art Unit: 2883

the invention was made that an elastic porous or mesh material will elongate at the intersection of an optical fiber and the material if there is a frictional contact between the respective surfaces and the fiber is being pulled through the elastic material since this is a well known property of such materials.

**Regarding Claims 15,19:** Furukawa does not specifically disclose a cleaning device:

- a) wherein the cleaning member is held to have such a slack that the contact portion which is in contact with the optical fiber is movable in a moving and radial direction of the optical fiber due to the movement of the optical fiber.

However, Furukawa does teach the use of a cleaning member made of materials that have elastic properties (Paragraph 17). It would have been obvious to one of ordinary skill in that art at the time the invention was made that an elastic porous or mesh material will be moveable in a radial direction of the optical fiber at the intersection of a moving optical fiber and the material if there is a frictional contact between the respective surfaces due to the varying axial and radial stresses and strains on the optical fiber from being pulled under tension through the elastic material since this is a well known property of such materials.

#### ***Prior Art***

- 4.1 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent Number	Name	Relevancy
JP 11-281860	Yazaki	Cleaning optical fiber
JP-08-194141	Furukawa	Cleaning optical fiber
US-6485193	Chandraiah	Cleaning optical fiber
US-5056185	Schotter	Cleaning optical fiber
US-4978413	Schotter	Cleaning and adhesive applicator for optical fiber
US-6466723	Miyake et al.	Cleaning optical fiber
US-6681437	Miyake et al.	Cleaning optical fiber

#### ***Conclusion***

- 5.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy G. Anderson whose telephone number is 571.272.2139. The examiner can normally be reached on M-Th 1130-2000.
- 5.2 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2883

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

[Guy.Anderson@uspto.gov](mailto:Guy.Anderson@uspto.gov)

March 29, 2006

**KAVEH KIANNI  
PRIMARY EXAMINER**

A handwritten signature in black ink, appearing to be 'Kaveh Kianni', written over a horizontal line.